

Docket No. 041-1714BRI

COURTESY COPY

**REISSUE APPLICATION  
SUPPLEMENTAL DECLARATION BY INVENTOR**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is described and claimed in patent number 5,815,293, granted September 29, 1998, and for which a reissue patent is sought on the invention entitled COMPOUND OBJECTIVE LENS FOR OPTICAL DISKS HAVING DIFFERENT THICKNESSES, the specification of which

☐ is attached hereto.☒ was filed on September 27, 2000 as reissue application number 09 / 671,674 and was amended on January 22, 2003.  
(If applicable)

I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I verily believe the original patent to be wholly or partly inoperative or invalid, for the reasons described below. (Check all boxes that apply.)

☐ by reason of a defective specification or drawing.☒ by reason of the patentee claiming more or less than he had the right to claim in the patent.☐ by reason of other errors.

At least one error upon which reissue is based is described as follows:

The issued patent is partially defective because the issued claims are narrower than they should be in view of the patent's disclosure and the prior art, and because the issued claims fail to recite fundamental features of the invention in the breadth to which they are entitled.

I believe the patent is at least partially defective because all of the issued claims are drawn to a compound objective lens including a lens having particular surfaces implementing particular functions, and to a plural focal point generating means generating a plurality of beams of divided light and converging the beams at focal points on a side facing a specific one of the surfaces, and conditioned on the two beams being transmitted through two substrates and being converged on information recording planes placed at two different distances from surfaces of two substrates at diffraction limits.

*Reissue Oath, U.S. Patent 5,815,293*

Page 2

However, I believe that the claims should have been more broadly directed to a more fundamental feature of the invention, based on relationships of the numerical apertures NA of the compound objective lens and the positions of at least two kinds of focal points to be focused, as illustrated by thicknesses T1 and T2 of two kinds of optical disks.

We, the patentees, have described at col. 3, lines 31-50 of the reissue application for example, a solution to a problem arising from increased chromatic aberration in imaging optical systems when the numerical aperture is increased, as occurs in conventional attempts to obtain a high-density memory capacity of an optical disk. As part of our invention we have disclosed a manner of effectively avoiding the problem by making the optical disk thinner and, if the optical disk is to be of a larger thickness such as used in conventional CD's, by making the numerical aperture smaller.

I further believe that, in accordance with our disclosure, such a feature may be implemented by simultaneously controlling the numerical apertures (NA1 and NA2) and the thicknesses (T1 and T2) of optical disks, and that it had not been known in the prior art that different numerical apertures NA1 and NA2 were adaptable to one optical lens so as to make possible focusing of plural focal points at different distances.

I therefore believe that the claims to the present invention should have been more broadly drawn to the inventive concept of providing an optical lens having a plurality of numerical apertures and capable of producing a plurality of focal points at different distances, as this feature of the invention advantageously permits both a conventional optical disk and a high-density-memory-capacity optical disk to be handled by one optical lens, *inter alia*.

I believe that the scope of the present invention is more fundamentally and broadly recited by reference to numerical apertures (NA1 and NA2) which are not equal to one another and to distances (thicknesses T1 and T2) that are not equal to each other.

Although issued claim 14 refers to compound objective lens in which at least two beams are converged at focal points positioned "at a first distance T1 from a surface of the first substrate at a diffraction limit and ... at a second distance T2 (T1  $\neq$  T2)" and "in which a numerical aperture of the lens means for the incident light converged at one focal point of the focal points differs from that for the incident light converged at another focal point of the focal points", it is my belief that this recitation of the invention is unduly narrowed by the presence of additional limitations found in the parent claim thereof and that the additional limitations were not added to the features of claim 14 to obtain allowance thereof.

It is my further belief that the features of the invention are more particularly and effectively expressed by recitation of a compound objective lens, comprising a region to produce a focal point on an information plane through a layer, wherein the region of the lens is divided into a plurality of regions including at least both of a first region and a second region by dividing the region of the lens depending on differences in a distance from an optical axis of the lens, the first region being located farther than a position of the second region from the optical axis, the second region being optimized so that the lens has a numerical aperture NA2 to produce a focal point through a second layer on an information plane placed at a distance T2 from the surface of the second layer, and both of the first region and the second region being optimized so that the lens has a numerical aperture NA1 (N1 is not equal to N2) to produce a focal point through a first

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layer on an information plane placed at a distance  $T1$  ( $T1$  is not equal to  $T2$ ) from the surface of the first layer."

I further believe that, in one particular mode of the invention,  $NA1 > NA2$  and  $T1 < T2$ .

However, during the prosecution of the issued patent, Applicants failed to submit a claim directly including the above limitations of " $NA1$  is not equal to  $NA2$ " and " $T1$  is not equal to  $T2$ ."

I therefore believe that, for this reason, the patent should be reissued.

The issued patent is further partially defective because a number of claims pending therein were inadvertently cancelled, although not rejected over prior art, and although the claims had been identified by the examiner as being linked to the issued claims.

I particularly believe that claims 154, 173, 234 and 210 in the application which matured into the issued patent, which were identified by the examiner as linking the structure of issued claim 1 to several other groups of claims, were cancelled irrespective of Applicants' directions to retain the claims in the application and irrespective of the fact that the claims were not rejected over prior art. I thus believe that these claims, as well as the claims dependent therefrom, such as then pending claims 140, 148, 150, 155-162, 163, 164-167, 168, 170, 171, 172, 174-194, 195, 196-202, 203, 204, 205, 206, 207-209, and 211-214, would have been examined and allowed upon finding issued claim 1 allowable over the prior art.

I therefore also submit herewith various claims corresponding to various of the cancelled claims.

All errors corrected in this reissue application arose without any deceptive intention on the part of the applicants. As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Name(s) and Registration Number(s)

Israel Gopstein, Esq. 27,333

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Direct all communications about the application to:

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Clark & Brody  
1750 K Street, N.W.  
Suite 600  
Washington, D.C. 20006

Phone: (202) 835-1111  
Fax: (202) 835-1755

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified

Reissue Oath, U.S. Patent 5,815,293

Page 4

below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)  
Claimed

Priority

5-14432

JAPAN

1 FEBRUARY, 1993



5-193353

JAPAN

4 AUGUST 1993



Application No.

Country

Day/Month/Year filed

Yes

No

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.

**Yoshiaki KOMMA**

Full name of sole or first inventor (given name, family name)

*Yoshiaki Komma*

February 7, 2003

Inventor's signature

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**Sadao MIZUNO**

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*Sadao Mizuno*

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Citizenship

**Seiji NISHINO**

Full name of third joint inventor (given name, family name)

*Seiji Nishino*

February 7, 2003

Inventor's signature

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Osaka, JAPAN

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